14 22. (Once Amended) A fluorescent lamp lighting apparatus in accordance with claim 1 or 2, wherein said drive-signal generation circuit further comprises a delay circuit connected to the output of said trigger input circuit or the output of said separate-excitation/self-excitation selection switch circuit so that the amount of delay can be controlled depending on an external input voltage.

REMARKS

The above-identified patent application has been reviewed in light of the Examiner's Action dated October 25, 2000, which rejects pending Claims 1, 2, 4-21, 23 and 24 and objects to Claims 3 and 22. Claims 25-29 have been allowed. In the amendment set forth above, Claims 1, 2, 8, 15, 21 and 22 have been amended, and Claim 3 has been canceled. As set forth more fully below, reconsideration and withdrawal of the Examiner's rejections of Claims 1, 2, 4-21, 23 and 24 and objections to Claims 3 and 22 are respectfully requested.

Claims 5, 8, 9, 11, 12 and 15-21 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicants regard as the invention. In the amendments set forth above, Claims 1, 2, 8, 12, 15, 21 and 22 have been amended to more particularly point out and distinctly claim the invention. In particular, the amendments to Claims 1 and 2 address the lack of antecedent basis found by the Examiner with respect to Claims 5 and 16-20. The amendments to Claims 8, 12, 15 and 21 address the Examiner's lack of antecedent basis objections not remedied by the amendments to Claims 1 or 2. In view of these amendments, the grounds for the Examiner's rejections of Claims 5, 8, 9, 11, 12 and

15-21 under 35 U.S.C. §112 have been removed, and the rejections of those claims should be reconsidered and withdrawn.

Claims 1, 2 and 4 stand rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 5,781,418 to Chang et al. ("Chang"). Claims 1, 2, 4, 6-8 and 19 stand rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 5,977,723 to Yoon ("Yoon"). In addition, Claim 10 stands rejected under 35 U.S.C. §103 over Chang. Without necessarily agreeing with the Examiner's findings regarding those references, Applicants note that Claim 3 has been found to be allowable by the Examiner. In the amendments set forth above, Claims 1 and 2, from which Claim 3 depended, have been amended to incorporate the elements recited by Claim 3, with corrections to ensure proper antecedent basis of the recited elements. Claim 3 itself has been canceled. In view of these amendments, Applicants submit that Claims 1 and 2, and Claims 4-19, 20, 21, 23 and 24, which variously depend from Claims 1 and 2, are now in condition for allowance. Therefore, the rejections of the claims should be reconsidered and withdrawn.

Applicants note with appreciation the Examiner's indication that Claims 25-29 are allowed, and that Claims 5, 9, 11-18, 20, 21, 23 and 24 would be allowable if rewritten to overcome the rejections under 35 U.S.C. §112 and to include all of the limitations of the base claim and any intervening claims. As set forth above, the amendments to the claims address the Examiner's rejections made under 35 U.S.C. §112, and Claims 1 and 2, from which Claims 5, 9, 11-18, 20, 21, 23 and 24 variously depend, have been placed in condition for allowance. Accordingly, it is submitted that these claims are all now in condition for allowance.

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Claims 3 and 22 stand objected to as being dependent upon a rejected base claim. However, the Examiner finds that Claims 3 and 22 would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. In the amendments set forth above, the elements recited by Claim 3 have been incorporated into Claims 1 and 2, and Claim 3 has been canceled. Claim 22 depends from Claims 1 or 2, and therefore should be in condition for allowance for at least the same reasons that Claims 1 and 2 are now in condition for allowance. In view of the amendments to the claims, the Examiner's objections to Claims 3 and 22 should be reconsidered and withdrawn.

Attached hereto is a marked up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version With Markings to Show Changes Made."

The application now appearing to be in form for allowance, early notification of same is respectfully requested. The Examiner is invited to contact the undersigned by telephone if doing so would expedite the resolution of this case.

Respectfully submitted,

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Date: March 26, 2001

By: _____

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Drawings:

Fig. 47 has been amended as shown in the attached figure.

In the Claims:

Claim 3 has been cancelled.

Claims 1, 2, 8, 12, 15, 21 and 22 have been amended as follows:

1. (Once Amended) A fluorescent lamp lighting apparatus comprising:

a DC-voltage generation circuit for generating a DC voltage~~;~~;

a drive-signal generation circuit for generating and outputting desired high-voltage-side and low-voltage-side pulse signals by using the DC voltage from said DC-voltage generation circuit~~;~~; and

a drive control circuit having switching means driven by the pulse signals input from said drive-signal generation circuit to output a drive signal across the output terminals thereof, wherein a resonance circuit and the filament electrodes of a fluorescent lamp light-emitting tube are connected across the output terminals of said switching means, and

said drive-signal generation circuit having:

a timer circuit in which the output signal thereof is altered after a predetermined time from power on;

a separate-excitation oscillator for outputting a signal having a predetermined frequency;

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a separate-excitation/self-excitation selection switch circuit for outputting one of two input signals depending on the output signal of said timer circuit;

a trigger input circuit for detecting the resonance frequency of said resonance circuit;

a high voltage-side pulse generation circuit having a high-voltage-side dead time generation circuit, a narrow pulse generation circuit, a level shift circuit, a pulse reproduction circuit and an output circuit;

a low-voltage-side pulse generation circuit having a low-voltage-side dead time generation circuit and an output circuit; and

an under-voltage lockout circuit for outputting an output signal when the voltage of the power source is a predetermined voltage or less at the time of the rising and falling of the power source.

2. (Once Amended) A fluorescent lamp lighting apparatus comprising:

a DC-voltage generation circuit for generating a DC voltage;

a drive-signal generation circuit for generating and outputting desired high-voltage-side and low-voltage-side pulse signals by using the DC voltage from said DC-voltage generation circuit; and

a drive control circuit having first switching means driven by the high-voltage-side pulse signal input from said drive-signal generation circuit, and second switching means connecting in series therewith and driven by the low-voltage-side pulse signal input from said drive-signal generation circuit, wherein an inductance device, the pair of filament

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electrodes of the fluorescent lamp light-emitting tube and a first capacitor are connected across both ends of said second switching means, and

said drive-signal generation circuit having:

a timer circuit in which the output signal thereof is altered after a predetermined time from power on;

a separate-excitation oscillator for outputting a signal having a predetermined frequency;

a separate-excitation/self-excitation selection switch circuit for outputting one of two input signals depending on the output signal of said timer circuit;

a trigger input circuit for detecting the resonance frequency of a resonance circuit, wherein said resonance circuit comprises said inductance device and said first capacitor;

a high voltage-side pulse generation circuit having a high-voltage-side dead time generation circuit, a narrow pulse generation circuit, a level shift circuit, a pulse reproduction circuit and an output circuit;

a low-voltage-side pulse generation circuit having a low-voltage-side dead time generation circuit and an output circuit; and

an under-voltage lockout circuit for outputting an output signal when the voltage of the power source is a predetermined voltage or less at the time of the rising and falling of the power source.

8. (Once Amended) A fluorescent lamp lighting apparatus in accordance with claim 2, wherein said separate-excitation oscillator is configured to output a signal wherein the frequency of the output signal is gradually changed from either the low-

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frequency range or the high-frequency range of the resonance frequency of the ~~LC~~ resonance circuit at the time of non-lighting of said light-emitting tube.

12. (Once Amended) A fluorescent lamp lighting apparatus in accordance with claim 2, further comprising a timer circuit configured so that a capacitor, one terminal of which is grounded, is charged with a constant current at the rising of the power source, and so that when the voltage across the terminals of said capacitor reaches a setting voltage, the output signal is switched, wherein

a resistor is inserted between one terminal of said capacitor, the other terminal of which is grounded, and the power source, or between one terminal of said capacitor, the other terminal of which is grounded, and ground, said separate-excitation oscillator is configured to output a signal for changing the frequency of lighting from a frequency higher than the resonance frequency of said ~~LC~~ resonance circuit at the time of non-lighting of said light-emitting tube to a frequency lower than said resonance frequency.

15. (Once Amended) A fluorescent lamp lighting apparatus in accordance with claim 2, further comprising a timer circuit configured so that a capacitor, one terminal of which is grounded, is charged with a constant current at the rising of the power source, and so that when the voltage across the terminals of said capacitor reaches a setting voltage, the output signal is switched, wherein said separate-excitation oscillator is configured to output a signal having a frequency gradually decreasing from a frequency higher than the resonance frequency of said ~~LC~~ resonance circuit at the time of non-lighting of said light-emitting tube, and then to output a signal having the resonance frequency of said ~~LC~~ resonance circuit at the time of lighting of said light-emitting tube.

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21. (Once Amended) A fluorescent lamp lighting apparatus in accordance with claim 9, wherein a capacitor for delaying the input signal of said comparator is connected to the input portion of said comparator to attain phase alignment at the time of detecting the resonance frequency of said ~~LC~~ resonance circuit.

22. (Once Amended) A fluorescent lamp lighting apparatus in accordance with claim 1 or 2, wherein said drive-signal generation circuit further comprises~~:~~

~~a timer circuit in which the output signal thereof is switched at a predetermined time after power on,;~~

~~a separate-excitation oscillator for outputting a signal having a predetermined frequency;~~

~~a separate-excitation/self-excitation selection switch circuit for outputting one of two input signals depending on the output signal of said timer circuit 212,;~~

~~a trigger input circuit for detecting the resonance frequency of said series resonance circuit;~~

~~a high-voltage-side pulse generation circuit having a high-voltage-side dead time generation circuit, a narrow pulse generation circuit, a level shift circuit, a pulse reproduction circuit and an output circuit,;~~

~~an under-voltage-side pulse generation circuit having an under-voltage side dead time generation circuit and an output circuit,;~~

~~an under-voltage lockout circuit for outputting an output signal when the voltage of the power source is a predetermined voltage or less at the time of the rising and falling of the power source; and~~

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a delay circuit connected to the output of said trigger input circuit or the output of said separate-excitation/self-excitation selection switch circuit so that the amount of delay can be controlled depending on an external input voltage.

PRIOR ART

FIG. 47